

REMARKS

Claims 1-46 are pending in the present application and were rejected in an Office Action dated February 27, 2004. The Office Action cited the following references:

1. U.S. Patent No. 6,042,235, by Machtig, et al., entitled "Videoconferencing Eye Contact Spatial Imaging Display" (referred to as "Machtig" hereinafter).
2. "4.12: Multiscreen Display Method for Expanding Stereoscopic Viewing Space," to Komatsu, et al. (referred to as "Komatsu" hereinafter).
3. U.S. Patent No. 4,852,988, by Velez, et al., entitled "Visor and Camera Providing a Parallax-Free Field-of-View Image for a Head-Mounted Eye Movement Measurement System" (referred to as "Velez" hereinafter).

Rejection of Claims 1-2, 10-24, 28-29, 31-37, 40-41, and 44-46 under 35 U.S.C. § 102(e)

Claims 1-2, 10-24, 28-29, 31-37, 40-41, and 44-46 were rejected under 35 U.S.C. § 102(e) as assertedly being anticipated by Machtig. Applicant respectfully traverses these rejections.

Claim 1 recites a communication system that includes a "visual depth cue being in the form of one or more physical objects visible through the two-way mirror" (emphasis added). The element is neither taught nor suggested in Machtig. Rather, Machtig teaches a display device, such as display device 100, display device 112, or display device 120 upon which an image of an object is displayed, that is seen through a two-way mirror 106, per Figures 5 through 14 of Machtig. Applicant has carefully reviewed the portions of Machtig referenced by Examiner. Applicant finds no teaching or suggestion in those portions, and is unaware of any other teaching in Machtig, to employ an actual physical

object, which physical object is viewable through the two-way mirror and which provides a visual depth cue to the observer. In fact, Machtig arguably teaches away from Applicant's invention. Machtig teaches the use of a "background image display 120 [that] provides a backdrop image that appears to the observer to be three-dimensional and confined within the housing 122" (Col. 8, lines 34 – 38, emphasis added). The backdrop image approach of Machtig imposes severe design constraints. As Machtig notes, "It is a central aspect of this invention that all spatial objects are set against a black (i.e. darkened) background...This black background assures that the rectangular shape of luminescent screen 136 will not be seen floating together with the first spatial object 110...Were the rectangular shape of the luminescent screen 136 visible, it would cue the observer that the object's source is a display, such as a television, thereby destroying the illusion of a floating object." (Col. 10, lines 38 – 53). By sharp contrast, Applicant's invention is not so limited because Applicant makes use of actual background objects, i.e., physical objects, to provide a visual depth cue – thereby there is no need to blacken the background in order to create an illusion that a displayed object is actually an object. Because Machtig fails to teach or suggest a "visual depth cue being in the form of one or more physical objects visible through the two-way mirror from the observation zone" claim 1 is patentably distinct over the reference.

Claim 2 is also patentably distinct over Machtig for the same reasons as provided above with reference to claim 1. Machtig fails to teach or suggest the use of one or more physical objects as a visual depth cue. As such, the reference fails to teach or suggest having physical objects that are visually located at specific positions vis-à-vis the visual position of an image.

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Claims 10 and 11 were also rejected over Machtig. Applicant respectfully traverses the rejection on the ground provided above with respect to claim 1, from which claims 10 and 11 depend, as well as for the further defining limitations of claims 10 and 11. For instance, claim 11 requires that the system "represents the remote participant at the second location as a substantially life-size image in relation to the setting." Applicant finds no teach or suggestion of this element in the portion of Machtig relied upon by Examiner and is unaware of any disclosure of the element in other portions of the reference.

With regard to claim 12, Examiner has referenced Figure 2 and column 1, lines 62 – 67 of Machtig as teaching the elements of this claim. Note, however, that claim 2 (which depends from claim 1) requires that the physical object be "visible through the two-way mirror from the observation zone." Machtig fails to teach this limitation. Note that the object 20 of Figure 2 is on the same side of the mirror 24 (and the mirror 10) as the observation zone. Hence, assuming solely for the sake of argument (and without acquiescing to that position) that the other claim limitations are met, Machtig nonetheless fails to teach an object that is visible through the two-way mirror.

Claims 13 – 18 are patentably distinct over the prior art for the reasons provided above with regard to the claims from which they depend, as well as for their further defining limitations. Applicant believes that the above response with regard to claim 1 is sufficient to fully distinguish claims 13 – 18 over the prior art. Applicant reserves the right to further distinguish these claims over the reference in future correspondence, should the need arise.

Claim 19 and claims 20 and 21, which depend from claim 19, all require that the “remotely-captured images are displayed so as to create a stereoscopic visual effect when viewed from the observation zone.” Applicant finds no teaching or suggestion of this limitation in the portions of Machtig cited by Examiner and is unaware of any other disclosure of this element. Rather than displaying the images to create a stereoscopic visual effect, Machtig instead uses a cumbersome system involving 3-dimensional forms for the screen (form 362 of Figures 59, 60, 62, etc.) and mechanical and robotic actuators to physically re-position the screen to “face” toward the observer. This is a fundamentally different approach that neither teaches nor suggests the stereoscopic display of claim 19, the light polarizing elements to form pairs of images of claim 20 or the alternating images captured from different viewpoints of claim 21.

Examiner has also rejected claims 22-24 on the basis of Machtig. Claim 22 recites that “at least one of the locations is provided with at least two image-capturing devices.” Applicant respectfully traverses the rejection. It appears that Examiner has relied upon Figure 16 of Machtig in forming this rejection. A careful review of the figure, however, and of the text describing same (col. 13, lines 44 – 56) reveals that the elements of Figure 16 are actually a “first laser disc player 160, a second laser disc player 162, and a third laser disc player 164.” Nowhere, however, does Machtig teach or suggest two image-capturing devices. Claims 23 and 24 depend from claim 22 and contain the same limitation, which is absent from Machtig.

Claim 28 requires “means for correlating actions of a participant . . . with the one or more physical objects in the first location three dimensional setting so as to produce the impression of interaction” with the objects. Examiner has referenced Figure 65 of

Machtig as teaching this element. Applicant respectfully traverses, however, because Figure 65 does not, in fact, show one or more physical objects. Rather, the objects 428 are merely displayed images that appear oriented toward positions 408, 410, and 412. These are not physical objects. As demonstrated above with respect to claim 1, Machtig fails to teach or suggest the use of one or more physical objects as visual depth cues. As such, Machtig cannot teach or suggest the limitation of correlating actions of a participant with the one or more physical objects.

Claim 29 was rejected for "the same reasons set forth in claim 1." Applicant respectfully traverses this rejection. Claim 29 recites a communication system having a "three dimensional setting with a visual depth cue in the form of one or more physical objects viewable from the observation zone of the second location." Machtig fails to teach or suggest this limitation. Rather, Machtig teaches a display device, such as display device 100, display device 112, or display device 120 upon which an image of an object is displayed, that is seen through a two-way mirror 106, per Figures 5 through 14 of Machtig. Applicant is aware of no teaching or suggestion in Machtig to employ an actual physical object, which physical object is viewable through the two-way mirror and which provides a visual depth cue to the observer. For at least these reasons claim 29, and by dependence claims 30 through 35, are allowable over the reference.

Claims 36 – 37 were rejected "for the same reasons set forth in claim 1." In response, Applicant respectfully traverses on the grounds that claim 36 recites "a three dimensional setting with a visual depth cue viewable from the observation zone." The apparent image of Machtig (e.g., display object 110 of Figure 5) does not teach or suggest this limitation. Furthermore, claim 36 recites that remotely-captured images are

"projected onto a retroreflective screen" and "viewed in retroreflection at the observation zone." Examiner has failed to anywhere identify, and Applicant is unaware of, any teaching or suggestion of this limitation in the reference. Hence, claim 36, and by dependence claims 37 – 39, are allowable over the prior art.

Claim 40 was rejected for "the same reasons set forth in claim 1." Applicant respectfully traverses this rejection on the grounds that claim 40 recites a "second location comprising a visual depth cue physically located on an opposite side of the two-way mirror. Machtig fails to teach or suggest this limitation. Claim 40 further recites that the "remotely-captured images from the first location are projected onto a retroreflective screen" and are "viewed in retroreflection." Machtig fails to teach or suggest these limitations. For at least these reasons claim 40 is allowable over the reference.

Claim 41 recites a visual depth cue in the form of one or more physical objects located on an opposite side of the two-way mirror relative the observation zone. Machtig fails to teach or suggest this limitation. As such, claim 41, and by dependence claims 42 – 43, are patentably distinct over the reference and should be allowed.

Claims 44 – 45 were rejected for "the same reasons set forth in claims 32-33" and claim 46 was rejected for "the same reasons set forth in claims 34-35." Applicant respectfully traverses these rejections on the grounds that claims 44 – 46 depend from claim 1, which, as demonstrated above, is patentably distinct over the reference, as well as for the further defining limitations of the respective claims.

Rejection of Claims 3-9 and 30 under 35 U.S.C. § 103(a)

Claims 3-9 and 30 have been rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over Machtig in view of Komatsu. Applicant respectfully traverses these rejections. Claim 3 requires a setting comprising "a chair, the back of the chair being visually located rearwardly of a visual position of the image." Examiner has admitted that Machtig fails to teach this element. Komatsu also fails to teach this element. Rather, Komatsu merely teaches the use of a screen upon which an image of a chair is projected. See Figure 4 of Komatsu, wherein "The chair is displayed on the front screen, the background image is displayed on the rear screen" (emphasis added). Thus Komatsu, which merely disclosed a displayed image, suffers from the same deficiency as Machtig (which as addressed above, does not teach or suggest a visual depth cue comprising a physical object, but merely teaches a displayed image). Neither Machtig nor Komatsu alone teaches a setting comprising an actual chair, nor does the combination. Furthermore, the reference nowhere provides any motivation to modify their respective or combined teachings to obtain the recited claim element.

Claims 4, 5, 6, and 9 are patentably distinct over the combination of Machtig and Komatsu for similar reasons. Neither Machtig nor Komatsu, alone or in combination, teach or suggest a setting which comprises furniture or a lectern or a stage. Again, an image of a thing is not the same as the thing. Furthermore, Examiner has nowhere identified, and Applicant is unaware of any teaching or suggestion in the references, of a "substantially full height image of a participant" as required in claims 7, 8, and 30. For at least these reasons, as well as the reasons provided above with respect to claim 1, from which claims 4 – 9 depend, the claims should be allowed over the cited references.

Rejection of Claims 25-27, 38-39, and 42-43 under 35 U.S.C. § 103(a)

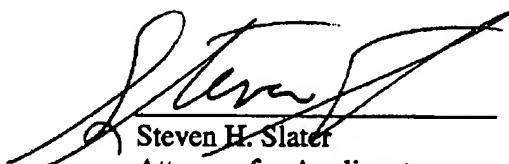
Claims 25-27, 38-39, and 42-43 have been rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over Machtig in view of Velez. Applicant respectfully traverses these rejections. Machtig relies upon curved display surfaces, such as curved surface 426 of Figure 65 to provide for apparent eye contact of the participants. As such, Examiner has failed to identify any motivation for why one of skill in the art would combine the teachings of Machtig with an eye-tracking device, such as purportedly taught by Velez. In fact, Applicant submits that it is only with the benefit of Applicant's own teaching that one would find motivation for the combination suggested by Examiner. As such, the rejection of claims 25-27, 38-39, and 42-43 should be withdrawn.

In view of the above, Applicant respectfully submits that the application is in condition for allowance and requests that the Examiner pass the case to issuance. If the Examiner should have any questions, Applicant requests that the Examiner contact Applicant's attorney at the address below.

Respectfully submitted,

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Date



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